Patent claims

1. A process for producing single-crystal structures, components or workpieces,
in particular from metallic superalloys,
on a substrate (7),
in particular with a single-crystal structure or single-crystal structures by epitaxial growth of layer material (13)
by means of a first material application process,

characterized

in that an intermediate layer (10) is applied where there is no single-crystal or directional structure in the substrate (7), and
in that the layer material (13) is then epitaxially grown on the intermediate layer (10).

2. The process as claimed in claim 1,
characterized in that

the intermediate layer (10) is subjected to a diffusion treatment,
so that the intermediate layer (10) together with the substrate (7) and/or the layer (13) is at least partially transformed into a region (16) of the same material composition.

3. The process as claimed in claim 1,
characterized in that

the intermediate layer (10) is generated by electrochemical means.

4. The process as claimed in claim 1, characterized in that

an intermediate layer (10) with a non-directional microstructure is applied.

5. The process as claimed in claim 1, characterized in that

an intermediate layer (10) with a directional microstructure is applied.

6. The process as claimed in claim 1, characterized in that

the intermediate layer (10) is applied by means of a second material application process.

7. The process as claimed in claim 1, characterized in that

the composition ratio of the constituents for the intermediate layer (10) is adapted to the composition ratio of the main constituents of the substrate (7).

8. The process as claimed in claim 1, characterized in that

the material composition of the intermediate layer (10) at least approximately corresponds to the material composition of the substrate (7).

9. A component, in particular formed from a metallic superalloy,
which comprises a substrate (7),
which at least partially has single-crystal structures,

characterized in that

the component (1) has an intermediate layer (10) where there is no single-crystal or directional structure in the substrate (7) and
layer material (13) with a single-crystal structure or single-crystal structures is present on the intermediate layer (10).